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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,748	04/13/2004	Jin Woong Kim	2832-0178PUS1	4588
2292	7590	05/18/2007	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			BLAN, NICOLE R	
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FALLS CHURCH, VA 22040-0747			ART UNIT	PAPER NUMBER
			1709	
			NOTIFICATION DATE	DELIVERY MODE
			05/18/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/822,748	Applicant(s) KIM ET AL.	
	Examiner Nicole Blan	Art Unit 1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 7, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanigawa et al. (U.S. Patent 5,887,456, hereafter '456).

Claim 1: A spray type drum washing machine [abstract] comprising: a cabinet [(1), Fig. 1, col. 8, lines 37-39]; a tub [(2), Fig. 1, col. 8, lines 40-42] mounted in the cabinet, and adapted to contain wash water therein; a circulation line [(61a to 59), Fig. 7, col. 11, lines 11-19] connected between a portion of the tub and another portion of the tub [at the top of the tub is 59] to circulate wash water through the tub; a pump [(57), Fig. 7, col.10, line 63] installed at the circulation line, and adapted to forcibly feed wash water through the circulation line for the circulation of the wash water through the tub [col. 11, lines 15-19]; and atomizing means [(59), Fig. 7, col. 11, lines 15-19] provided at the circulation line, and adapted to atomize the wash water fed through the circulation line, whereby the wash water to circulate through the tub is supplied in an atomized state into the tub.

Claim 7: The spray type drum washing machine according to claim 1, wherein the circulation line is provided, at an outlet end thereof, with a diffusion nozzle [(59), Fig. 7, col. 11, lines 15-19].

Claim 17 is rejected over '456 as applied to claims 1 and 7 above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over '456 as applied to claim 1 above, and further in view of Muhr (U.S. Patent 6,117,219, hereafter '219).

Claim 2: '456 teaches the limitations of claim 1 above. They do not explicitly teach an atomizing means comprising: a case, diffusion means, and a blowing fan in order to define a flow of passage and circulation for the atomized water. However, '219 teaches atomizing means comprising a case [(1), Fig. 1, pg. 2, col. 4, line 1], diffusion means [(11), Fig. 1, col. 4, lines 19-26], and a blowing fan [(15), Fig. 1, col. 4, line 33] in order to provide for circulation of the atomized water. The selection of something based on its known suitability for its intended use has been held to support *prima facie* cases of obviousness. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the atomizer of '219 as the particular atomizer of '456 with a reasonable expectation of success because '219 teaches a suitable atomizing means.

5. Claims 3-4, 6, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over '456 and '219, and further in view of Kwok (U.S. Patent 4,684,064, hereafter '064).

Art Unit: 1709

Claim 3: '456 and '219 teach the limitations of claim 2 above. They do not teach a diffusion means containing at least one centrifugal plate to be rotated about an axis passing through a center by a driving force or a diffusion net arranged around the centrifugal plate in order to diffuse wash water radially from the plate in an atomized state. The Examiner takes Official Notice that it is common knowledge to one of ordinary skill in the art of providing atomized fluids that a centrifugal atomizer would be used in order to radially displace the water and that a mesh screen would prevent the water droplets from merging into larger globules. See, for example, '064, that teaches a diffusion means by providing a diffusion net [(30), Fig. 2, col. 4, lines 1] that is arranged around the centrifugal plate, and adapted to diffuse wash water radially projected from the centrifugal plate in an atomized state [col. 4, lines 1 – 34] and at least one centrifugal plate [(16), Fig. 2] adapted to be rotated about an axis passing through a center thereof by a driving force [(11), Fig. 2] [col. 4, lines 3 – 17] in order to prevent the droplets from merging into large globules. The selection of something based on its known suitability for its intended use has been held to support *prima facie* cases of obviousness. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a centrifugal atomizer in order to prevent the smaller water droplets from merging into larger globules.

Claim 4: '456, '219, and '064 teach the limitations of claim 3 above. In addition, '064 teaches that at least one centrifugal plate [(14) and (16) fastened together with a pin (17), Fig. 1] comprises a plurality of centrifugal plates [(16 – inner plate) and (14 – outer plate)] axially spaced apart from one another [see spaces located above 24a and 34b] [Fig. 1, col. 4, lines 1 – 34].

Art Unit: 1709

Claim 6: '456 teaches the limitations of claim 1 above, '219 renders the use of a case and blowing fan obvious for the reasons applied to claim 2 above. '219 further teaches a driving means adapted to rotate the blowing fan [(17), Fig. 1, col. 4, lines 36-42]. '064 renders the use of a centrifugal plate and diffusion net obvious for the reasons applied to claim 3 above. '064 further teaches a driving means adapted to rotate the centrifugal plate [(11), Fig. 2] [col. 4, lines 3 – 17].

Claim 18: '456 teaches the limitations as applied to claim 17. '219 teaches the limitations as applied to claims 2 and 6 above. The Examiner takes Official Notice that it is common knowledge to one of ordinary skill in the art that a centrifugal atomizer would be used in order to radially displace the water and that a mesh screen would prevent the water droplets from merging into larger globules. See, for example, '064, that teaches at least one centrifugal plate [(16), Fig. 2] arranged in the case, and adapted to centrifugally radially project the wash water [col. 4, lines 1 – 34] introduced into the case; a diffusion net [(30), Fig. 2, col. 4, lines 1] arranged around the centrifugal plate, and adapted to atomize the wash water centrifugally radially projected from the centrifugal plate when the wash water passes there through [col. 4, lines 1 – 34]; and a drive means adapted to rotate the centrifugal plate [(11), Fig. 2] [col. 4, lines 3 – 17] in order to prevent the droplets from merging into large globules. The selection of something based on its known suitability for its intended use has been held to support *prima facie* cases of obviousness. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a centrifugal atomizer in order to prevent the smaller water droplets from merging into larger globules.

Art Unit: 1709

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over '456, '219, and '064 as applied to claim 3 above, and further in view of Gafner (U.S. Patent 6,183,175 B1, hereafter '175).

Claim 5: '456, '219, and '064 teach the limitations of claim 3 above. They do not teach a spray drum type washing machine wherein the centrifugal plate and the blowing fan are rotated by a dual-shaft motor adapted to generate the driving force. The Examiner takes Official Notice that it is common knowledge to one of ordinary skill in the art of rotary devices that a dual-shaft motor can be used to rotate two objects such as the centrifugal plates and the fan of the application. See, for example, '175, which teaches that electric motors with concentric shafts are suitable driving means and that a dual-shaft motor contains two concentric drive shafts. These drive shafts can be represented by the coupling of two electric motors seated one behind the other as show in Figure 6 of '175 [col. 2, lines 19 – 30] to rotate two separate devices. The selection of something based on its known suitability for its intended use has been held to support *prima facie* cases of obviousness. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a dual-shaft motor as the driving force to rotate the centrifugal plate and the blowing fan because it is a suitable tool for rotating two drive shafts.

7. Claims 8 – 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over '456 as applied to claim 1 above, in view of Roseen (PCT WO01/11134, hereafter '134 where U.S. Patent 6,585,781 is used as translation), and in further view of Babuin et al. (U.S. Patent 4,580,421, hereafter '421).

Art Unit: 1709

Claims 8 and 11: '456 teaches the limitations of claim 1 above. They do not teach a steam-generating device that changes the atomized wash water into steam and to supply the steam into the tub. However, '134 teaches a steam generating device [col. 4, lines 34-36] installed at the circulation line [(circulation line 34 connects to the tub 10 via outlet 36), Fig. 1, col. 3, lines 45-51] that is adapted to heat the wet steam as it emerges from the tub [(46), Fig. 1, col. 3, lines 45-52] in order to supply steam into the tub [(25), Fig. 1, col. 4, lines 39-42]. In addition, '421 teaches a device [(21), Fig. 1, col. 2, lines 45 – 60 and col. 6, lines 58 – 61] installed at the circulation line [(lines are 20, 28, 33, and 34), Fig. 1] that is adapted to heat [(23), Fig. 1, col. 3, lines 59 – 63] the atomized wash water emerging from the atomizing means before it is supplied to the tub. The selection of something based on its known suitability for its intended use has been held to support *prima facie* cases of obviousness. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a steam-generating device that heats the atomized water removed from the tub into steam.

Claim 9: '456, '421, and '134 teach the limitations of claim 8 above. In addition, '421 teaches a container [(21), Fig. 1, col. 3, lines 56 – 63] arranged at the circulation line, and adapted to allow the atomized wash water emerging from the atomizing means to pass there through; and a heater [(23), Fig. 1, col. 3, lines 59 – 63] adapted to heat the atomized wash water passing through the container.

Claim 10: '456, '421, and '134 teach the limitations of claim 9 above. In addition, '421 teaches a temperature sensing means [(24), Fig. 1, col. 3, lines 59 – 67] to measure internal temperatures of the container.

Claim 16 is rejected over '456, '421, and '134 as applied to claim 7 and 11 above.

Art Unit: 1709

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over '456, '421, and '134 as applied to claim 11 above, and further in view of '219 for the reasons applied to claim 2 above.

9. Claims 13-14 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over '456, '421, '134, '219, and '064.

Claims 13-14 are rejected over '456, '421, '134, and '219 as applied to claim 12 above, and further in view of '064 for the reasons applied to claims 3-4 above.

Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over '456, '219 and '064 as applied to claim 18 above, and further in view of '421 and '134.

Claim 19 is rejected over '456, '219 and '064 as applied to claim 18 above, and further in view of '421 and '134 for the reasons applied to claim 8 above.

Claim 20 is rejected over '456, '219, '064, and '134 as applied to claim 19 above, and further in view of '421 for the reasons applied to claims 9 and 10 above. In addition, '421 teaches control means adapted to control the heater in accordance with a signal outputted from the temperature sensing means [col. 3, lines 59 – 67].

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over '456, '421, '134, '219 and '064 as applied to claim 13 above, and further in view of '175 for the reasons applied to claim 5 above.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Spindel (U.S. Patent 4,489,574) teaches a washing machine with atomizer. Durazzani et al. (U.S. Patent 4,903,508) and Bae (U.S. Patent 5,385,037) teaches a heater in a

Art Unit: 1709

washing machine. Pasin et al. (U.S. Patent 6,840,068 B2) teaches a steam generation device in circulation line. Kim et al. (U.S. Patent 6,789,404 B2) teaches a steam-generating device. Walzel et al. (U.S. Patent 6,338,438) teaches a centrifugal atomizer with multiple plates spaced axially. Danneburg (U.S. Patent 4,527,343) and Grant (U.S. Patent 5,232,476) teach steam generation and atomization. Chung (U.S. Patent 7,062,863 B2) teaches an atomizer, heater, and fan.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole Blan whose telephone number is 571-270-1838. The examiner can normally be reached on Monday - Thursday 7:30-5 and Friday 7:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NRB



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